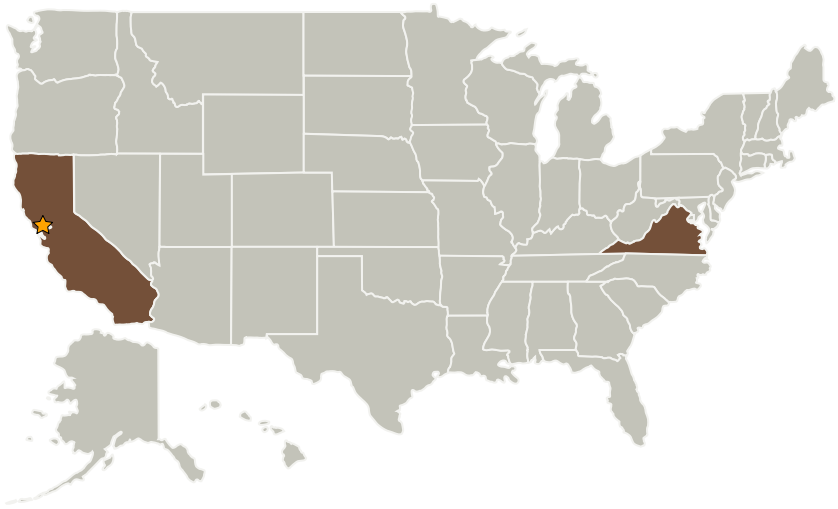
Cell/Tissue Culture Radiation Exposure Facility, Phase II

Completed Technology Project (2006 - 2008)

Project Introduction

We propose the development of automated systems to improve radiobiology research capabilities at NASA Space Radiation Laboratory (NSRL) at Brookhaven National Laboratory (BNL). Current radiobiology experimentation at the NSRL is limited primarily by the amount of time required to manually move samples to/from the radiation target area. Additionally, the NSRL facility currently does not support processing of samples during or directly after radiation exposure, or long duration radiobiology studies. Our proposed automated system will address the above issues as follows. First, an automated sample movement system will be developed to reduce the overhead time of the current manual system of moving samples to/from the radiation target area. Second, an Online Assay System will be designed to provide immediate sample analysis, such as sample fixation and freezing, to allow a better understanding of the radiation effects on the samples. Third, the Single Loop for Cell Culture (SLCC, developed by Payload Systems Inc. for NASA) system design will be modified to support long duration radiobiology research. In addition, the system will also support animal experiments.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Aurora Flight Sciences Corporation	Supporting Organization	Industry	Cambridge, Massachusetts

Primary U.S. Work Locations	
California	Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.5 Radiation
    - TX06.5.1 Radiation Transport and Risk Modeling